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ABSTRACT

Unique characteristics of a continuing education course in phlebotomy offered through Tarrant County Junior College in Forth Worth, Texas, are described. The course was created to address the lack of theoretical knowledge in the hospital-trained phlebotomist. The first course was offered in July 1979 on a noncredit basis for 2 nights a week for 4 weeks. Though brief, the curriculum content covered related didactic subject matter with some emphasis on psychomotor skills. A wide range of learning activities was utilized since students enrolled in the course presented varied backgrounds--both medical and nonmedical. After a brief history of phlebotomy, maintaining professionalism in the job was addressed. Attention was also directed to: the composition of blood and its functions; anticoagulants and vacutainers; laboratory departments and tests performed in each; anatomy; micropuncture and preparation of blood smears; the use of Microtainers and Unopettes; and medical ethics. The course has been in constant demand and has proven beneficial to both students and hospital facilities. (Author/SW)

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A Unique Approach to Phlebotomy Instruction

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Abstract

The lack of theoretical knowledge in the hospital trained phlebotomist has prompted the creation of a unique continuing education course in phlebotomy offered through the health professions department of the local junior college. Though brief, the curriculum content covers related didactic subject matter with some emphasis on psychomotor skills. A wide range of learning activities is utilized since students enrolled in the course present varied backgrounds-both medical and nonmedical. The course is in constant demand and has proven beneficial to both students and hospital facilities.

Introduction:

A backward glance over the past five or six years will reflect definite signs of an upgrading in the field of Phlebotomy. Conscientious endeavers can be noted in the form of the many courses offered throughout the country, the special attention now given this group by the society as well as laboratory staff and the number of papers written and appearing in the scientific journals. This paper was written to relate some of the unique characteristics of the continuing education course offered through Tarrant County Junior College in Fort Worth, Texas.

History:

This undertaking stemmed from a meeting held in September, 1978 in anticipation of instigating a course in the local area for the education of the phlebotomist. It was at that time obvious that this individual was sorely lacking in the theoretical knowledge so necessary to achieve a professional status. This lack of background prevented the employee from performing at the desired level and it was felt that this could surely be remedied with the proposed course of instruction. The meeting was composed of representatives-both Pathologists and Chief Medical Technologists-from the larger hospitals in the city favoring this suggestion. The concensus of

opinion was that the laboratories would be willing to hire and give the psychomotor skill training to those who had acquired the cognitive background from the program offered. With these details in mind, the curriculum was developed and the first course was offered in July, 1979. The non-credit course, taught outside the laboratory environment, consisted of three hours two nights a week for four weeks (24 contact hours). At the present time, 3 more hours have been added. The class was limited to an enrollment of 30 students and has since been lessened to 25 students. Two faculty members, both M.T.s having Masters Degrees and a deep interest in the subject, have conducted the classes. A laboratory assistant was called upon during several sessions when the emphasis was strong in laboratory technique. At the beginning, the classrooms utilized were centrally located in one of the hospitals or the Blood Center until the permanent facility, the new Community Campus, was made available. It is more than adequate in all respects.

Student Composition:

A diversity of the students enrolling in the course presented a challenge requiring a maximum use of instructional strategies as illustrated in Ford[1] (Table I). The basic requirement was a highschool education although the students enrolled ranged from those with no medical knowledge to LVNs and phlebotomists quite familiar with

TABLE I Learning Activities

Lectures and Textbook

35 mm. slides

Handouts

Blackboard

Brochures on bulletinboard

Overhead Transparencies

Displays

Group discussion

Role playing

Demonstration

Self-instructional packets

B-D 16 mm. film-Venipuncture

35 mm. Slide set with cassette on Micropuncture

Simulated arms

the manual skills. This alerted the instructors to keep the lectures basic yet imformative enough to hold the interest of all. The types of students enrolled are listed in Table II.

Curriculum Content:

The curriculum was carefully prepared to contain those facets of knowledge which would hopefully correct the most prominent deficiencies as outlined by the hospital representatives. Guidelines as listed in the NCCLS procedure manual[2] were included in the lectures. The introductory session was designed to create a relaxed mood by introducing the instructors and each student present in the class individually. The students were issued a textbook "So You Wanted To Collect a Blood Sample"[3]. A brief history of phlebotomy was given and course objectives as recommended by Magers[4] were passed out to the students before beginning the course material proper. Professionalism made up the bulk of the opening lecture series with emphasis on desirable traits and attitudes. For this type of instruction a group discussion was utilized to encourage class participation. a film, obtained from Becton-Dickinson[5] on loan, was shown at this time to acquaint those students having no medical experience with a preview of the phlebotomist role in the health care field.

TABLE II Different Categories of Students Enrolled

Occupations	%
Phlebotomists & Lab.	11.4
Nursing-Aids	28.8
No occupation	11.4
Non related work	17.4
Medical Office Personnel	7.1
Menial Health Related	3.8
College Level & Management	2.7
No information	17.4

At the second evening the lecture session began in earnest with the composition of blood and it's functions illustrated with 35 mm. slides of normal blood cells. Materials and equipment needed by a phlebotomist were displayed with an explanation as to why each item was important.

Anticoagulants and vacutainers were discussed next with emphasis on those most commonly used. This was followed by a discussion of the various laboratory departments and tests performed in each, as well as the type of specimen to be drawn for these respective tests. Proper identification of the patient and labelling of the specimen were emphasized at this time. Medical Terminology was introduced with handouts and assignments for the next session. A brief laboratory session was held in which the students practiced tying tourniquets and palpating veins on each other.

Anatomy was the next subject of discussion in which the veins available for venipuncture were pointed out along with recognition of difficult veins, unacceptable specimens and incidences causing this damage. Students began to practice venipuncture on simulated arms using needle-syringe and vacutainer. Their technique was criticized by the instructors and the students observing to prepare them for the venipuncture on each other.

Micropuncture and preparation of blood smears were dealt with by means of detailed lecture, overheads, a series of 35 mm. slides with cassette tape purchased from B-D[6] and actual practice with one-on-one supervision. Medical terminology was continued with much repitition throughout the remainder of the course.

At this point in the course, special procedures were described with emphasis on those which the phlebotomist most often performed. Timed tolerance tests were stressed, whereas, bleeding and coagulation testing were merely listed and briefly explained.

The laboratory practice continued with the use of Microtainers and Unopettes. The B-D manuals on Unopettes[7] were distributed to the students for self study. The beginning of venipuncture on one another was initiated, once again with close supervision. All students were required to sign a waiver before taking part in this activity.

A self-instructional packet[8] and role-playing were strategies used to acquaint the student with isolation techniques.

The final lecture consisted of Medical Ethics. Each student was given a copy of the Phlebotomists Code of Ethics and the Patient's Bill of Rights[9]. Again attitude and professionalism were re-emphasized along with proper dress and attitudes for job interviews.

Each instructional objective was presented and reviewed, followed by a repeat of the B-D film on venipuncture. The additional insight and understanding the student had gained visualized by this second showing of the film was discussed.

Student Evaluation:

Several types of testing were used in the course. The short quiz was given on several occasions to familiarize the student with testing and to alert the instructor as to the individual needs of each student.

A psychomotor checklist was available for the laboratory instructions. The student had to exhibit an acceptable degree of proficiency in the preparation of the blood smear, the fingerstick and the venipuncture before receiving the necessary mark of skill.

The final examination was given at the ninth and final session and was composed of multiple choice, interpretive exercises, true-false, short answer, matching questions and a final demonstration of slide preparation. Conditions for certification were: a grade of 70% or greater on the final examination and a demonstration of proficiency of manual skills to the instructors satisfaction. Following the accomplishment of these abilities, a certificate of 2.7 continuing education units was issued. As of this date, there have been 197

students completing the course with 9 who did not attain the passing grade and 13 dropouts (Table III). The fact that the course has been offered in the evening may account for the exceptional enrollment.

Conclusion:

There has been an obvious demand for this course in the area with waiting lists following each enrollment. The students have all shown great enthusiasm and have requested that additional courses be made available. At present, we are conducting yearly seminars covering a variety of subjects of interest to practicing phlebotomists. Notification of the programs are sent out to an area of a 150 mile radius. Attendance has been excellent. Our plans for the future include an advanced course with, perhaps, clinical practicum and eventually a credit course in phlebotomy at the junior college level.

TABLE III Non-passing & Attrition rate	
Total number enrolled students	197
Number not attaining 70% on written examination	9
Number of drop-outs	13

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